

REMARKS

Foreign Priority

The acknowledgement, in the Office Action, of a claim for foreign priority under 35 U.S.C. § 119(a)-(d), and that the certified copies of the priority documents have been received, is noted with appreciation.

Status Of Application

Claims 1-16 are pending in the application. The status of the claims is as follows:

Claims 1 and 7-9 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,075,562 to Sakaguchi et al. (hereinafter the "Sakaguchi patent");

Claims 1 and 7-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,335,072 to Tanaka et al. (hereinafter the "Tanaka patent");

Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Tanaka patent;

Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims; and

Claims 10-16 are allowed.

Drawings

The indication, in the Office Action, that the drawings filed on February 13, 2001 are accepted by the Examiner, is noted with appreciation.

Allowable Subject Matter

The allowance of claims 10-16, by the Examiner, is noted with appreciation.

The objection to claims 4-6 as being dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims, is noted with appreciation. However, claims 4-6 have not been rewritten in independent form at this time.

35 U.S.C. § 102(e) and (b) Rejections

The Sakaguchi patent

The rejection of claims 1 and 7-9 under 35 U.S.C. § 102(e), as being anticipated by the Sakaguchi patent, is respectfully traversed based on the following.

Claim 1 of the present application requires the following:

An image-sensing device comprising:
a photoelectric conversion portion that outputs an analog electric signal natural-logarithmically proportional to an amount of incident light;
an output circuit that includes a temperature sensor and that corrects the analog electric signal output from the photoelectric conversion portion on a basis of ambient temperature detected by the temperature sensor.

Thus, according to claim 1, an analog electric signal output from a photoelectric conversion portion is corrected on the basis of detected ambient temperature.

Although the Sakaguchi patent does disclose a device with a temperature sensor, the Sakaguchi patent does not disclose or suggest an output circuit which corrects an analog electric signal output from a photoelectric conversion portion on the basis of detected ambient temperature. That is, according to the operation of the Sakaguchi patent, temperature compensation is achieved not by the image-sensing device itself but through processing performed in a later stage. In contrast, claim 1 requires that the analog electric signal logarithmically proportional to the amount of incident light which is output from the photoelectric conversion portion is corrected by the output circuit according to the ambient temperature. More specifically, temperature compensation is performed by the image-sensing device itself, before A/D conversion. Thus, the configuration claimed in claim 1 is distinguished from the Sakaguchi device. Accordingly, the Sakaguchi patent does not anticipate claim 1.

Claims 7-9 each depend from claim 1. Therefore, as claim 1 is not anticipated by the Sakaguchi patent, dependent claims 7-9 are also not anticipated by the Sakaguchi patent.

Accordingly, it is respectfully requested that the rejection of claims 1 and 7-9 under 35 U.S.C. § 102(e), as being anticipated by the Sakaguchi patent, be reconsidered and withdrawn.

The Tanaka patent

The rejection of claims 1 and 7-9 under 35 U.S.C. § 102(b), as being anticipated by the Tanaka patent, is respectfully traversed based on the following.

Like the Sakaguchi patent, the Tanaka patent does not disclose or suggest all of the requirements of claim 1. In particular, the Tanaka patent does not disclose or suggest an output circuit which corrects an analog electric signal output from a photoelectric conversion portion on the basis of detected ambient temperature. That is, although the Tanaka patent does disclose using color temperature when performing white balance correction, the Tanaka patent does not disclose or suggest an image-sensing device which performs temperature compensation itself. In fact, like the Sakaguchi patent, the Tanaka patent teaches a device which performs temperature compensation through processing performed in stages after the image sensing device.

Thus, because the Tanaka patent does not disclose or suggest an output circuit which corrects an analog electric signal output from a photoelectric conversion portion on the basis of detected ambient temperature, the Tanaka patent does not anticipate claim 1.

Claims 7-9 depend from claim 1. Therefore, because claim 1 is not anticipated by the Tanaka patent, dependent claims 7-9 are also not anticipated by the Tanaka patent.

Accordingly, it is respectfully requested that the rejection of claims 1 and 7-9 under 35 U.S.C. § 102(b), as being anticipated by the Tanaka patent, be reconsidered and withdrawn.

35 U.S.C. § 103(a) Rejection

The rejection of claims 2 and 3 under 35 U.S.C. § 103(a), as being unpatentable over the Tanaka patent, is respectfully traversed based on the following.

Claims 2 and 3 depend from claim 1. As shown above, the Tanaka patent does not disclose or suggest a device which meets the requirements of claim 1. Specifically, the Tanaka patent does not disclose or suggest an output circuit which corrects an analog electric signal output from a photoelectric conversion portion on the basis of detected ambient temperature. Thus, claim 1 is distinguished and nonobvious over the Tanaka patent. As claims 2 and 3 depend from claim 1, claims 2 and 3 are also distinguished and nonobvious over the Tanaka patent.

Accordingly, it is respectfully requested that the rejection of claims 2 and 3 under 35 U.S.C. § 103(a), as being unpatentable over the Tanaka patent, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

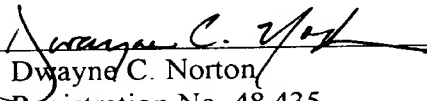
Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The following is a marked-up version of the changes to the specification and claims which are being made in the attached response to the Office Action dated April 23, 2002.

IN THE SPECIFICATION:

The paragraph beginning at page 2, line 1, and ending at page 2, line 7:

As shown in Fig. 16, each pixel has a photoelectric conversion circuit composed of a PN-junction photodiode PD that functions as a photosensitive means and a MOS [transistors] transistor T100 that has its drain and gate connected to the anode of the photodiode PD. A direct-current voltage VPD is applied to the cathode of the photodiode PD and a direct-current voltage VPS is applied to the MOS transistor T100 so that the MOS transistor T100 is so biased as to operate in a subthreshold region.

The paragraph beginning at page 7, line 18, and ending at page 8, line 3:

To the signal lines 11-1 to 11-m are connected, respectively, switches S1-1 to S1-m and switches [S2-2] S2-1 to S2-m. Through the switches S1-1 to S1-m, image signals are fed from the signal lines 11-1 to 11-m to capacitors C1-1 to C1-m, respectively. On the other hand, through the switches S2-1 to S2-m, noise signals are fed from the signal lines 11-1 to 11-m to capacitors C2-1 to C2-m, respectively. The image signals fed to the capacitors C1-1 to C1-m and sampled and held therein are then fed through the buffers 13a-1 to 13a-m, respectively, to the output circuit 14. On the other hand, the noise signals fed to the capacitors C2-1 to C2-m and sampled and held therein are then fed through the buffers 13b-1 to 13b-m, respectively, to the output circuit 14.

The paragraph beginning at page 27, line 24, and ending at page 28, line 14:

The R, G, and B signals fed to the color temperature detection circuit 5 are fed respectively to the integrator circuits 51, 52, and 53 so as to be integrated. Here, integration of these signals is achieved by adding together the signal levels of the color signals of each color for a predetermined time period, for example for the time period in which image signals corresponding to one frame is output, i.e. by adding together the signal levels of the color signals obtained from an identical number of pixels for each color. The R and G signals thus integrated by the integrator circuits 51 and 52 are fed respectively to the input terminals "a" and "b" of the comparator circuit 54, and the G and B signals thus integrated by the integrator circuits 52 [an] and 53 are fed respectively to the input terminals "b" and "a" of the comparator circuit 55. These comparator circuits 54 and 55, using as a reference signal the G signal fed to their respective input terminals "b", detect the signal levels of the R and B signals. Detecting the signal levels of the R and B signals relative to that of the G signal in this way constitutes detecting the color temperature of the subject being sensed.

IN THE CLAIMS:

1. (Once Amended) An image-sensing device comprising:
 - a photoelectric conversion portion that outputs an analog electric signal natural-logarithmically proportional to an amount of incident light; and
 - an output circuit that includes a temperature sensor and that corrects the analog electric signal output from the photoelectric conversion portion on a basis of ambient temperature detected by the temperature sensor.